

**REMARKS**

This Amendment is responsive to the Office Action mailed March 2, 2005. Following entry of this Amendment, claims 67-68, 70, 72-102 are pending in this application. Claims 69 and 71 have been cancelled. Applicants respectfully request reconsideration of this application.

**Amendments to the Specification**

In response to the Examiner's request to clarify which amended paragraph should replace the paragraph beginning on page 14 line 1 of the specification, Applicants request that the paragraph as amended above replace the paragraph beginning on page 14 line 1 of the specification. As noted by the Examiner, Applicants mistakenly identified two different paragraphs as replacing the paragraph on page 14 line 1 of the specification in the Amendment filed on August 13, 2004. Applicants then corrected one of the paragraphs as replacing the paragraph on page 12 line 1 of the specification, rather than page 14 line 1, in the Amendment filed on December 27, 2004. However, Applicants did not point out in the Amendment filed on December 27, 2004 that the other amended paragraph should replace the paragraph beginning on page 14 line 1 of the specification. Therefore, Applicants hereby request that the paragraph as amended above replace the paragraph beginning on page 14 line 1 of the specification.

**Amendments to the Claims**

With this response, Applicants have amended independent claim 67 to recite that the image forming layer includes a polymeric binder and a polymeric crosslinking material each of which are derived from phenol. Claims 68, 70, 72-74, and 76 depend on claim 67 and have each been amended to conform to the amendments made to claim 67. These amendments are supported by the claims and specification as originally filed. Specifically, the specification states that the image forming layer may contain a polymeric binder derived from phenol. (See page 5, line 1 of the specification.) The specification also states that the image forming layer may contain a polymeric crosslinking material and that polymeric

materials referred to as polymeric binders may be suitable for use as polymeric crosslinking materials. (See page 6, lines 1-2 of the specification.) Therefore, the specification supports the amended claim in which the image forming layer includes a polymeric binder and polymeric crosslinking material each of which are derived from phenol.

### Claim Rejections

The Examiner rejected claims 67-69, 71-73, 77, and 86 under 35 U.S.C. 103(a) as being unpatentable over UK 1,431,462 ("UK '462") in view of U.S. Pat. No. 2,984,588 to Graulich et al. The Examiner states that it would have been obvious to provide the method reported in UK '462 with a polymeric binder comprising a hydroxyl phenol as taught by Graulich et al. in view of the specific teaching by UK '462 to utilize the polymers disclosed by Graulich et al. Applicants respectfully submit that even if the polymers reported in Graulich et al. were used in the methods reported in UK '462, the method of the present invention would not result.

UK '462 describes a process for producing a relief image in which an acid is sprayed via ink-jet onto a polymer to crosslink the polymer. (See UK '462, pages 3-4 and Example 3.) As acknowledged by the Examiner, UK '462 does not report a method in which an acid is sprayed into a polymer that contains a hydroxyl, vinyl, acrylate or methacrylate moiety. Instead UK '462 states that polymers which contain N-methylol ether groups are suitable polymers for this process. UK '462 also states that "reference is also made to the polymers mentioned" in Graulich et al. (See UK '462, page 4, lines 15-17.) Graulich et al. reports a process of forming an emulsion of polymers with N-methylol ether groups. In one embodiment, Graulich et al. reports that phenols may be added to the emulsion of polymers with N-methylol ether groups to make the crosslinking reaction "more intensive." (See Graulich et al., Col. 3, lines 19-34.)

UK '462 also states that phenol formaldehyde resins may be used to make relief images by first spraying the resin with quinone diazides and then treating the resin with an aqueous alkali solution. (See UK '462, page 4, lines 32-41.) Following treatment or

development with the aqueous alkali solution, the parts of the phenol formaldehyde resin that were sprayed with quinone diazide dissolve.

Applicants respectfully submit that even if the polymers reported in Graulich et al. were used in the methods reported in UK '462, the method of the present invention would not result. As noted above, claim 67 has been amended so that the image forming layer includes a polymeric binder and a polymeric crosslinking material, each of which are derived from phenol. In contrast, Graulich et al. does not describe an image forming layer in which both the polymeric binder and the polymeric crosslinking material are derived from phenol. Instead, Graulich et al. describes an emulsion of polymeric materials in which the polymeric binder is formed of a polymer with N-methylol ether groups, not a polymeric material derived from phenol. Therefore, even if the polymeric material taught by Graulich et al. were used in the method taught by UK '462, the process of the present invention, would not result.

Claims 68-69, 71-73, 77, and 86 depend on claim 67 and are allowable for at least the same reason as claim 67. Therefore, Applicants respectfully request that the Examiner withdraw this rejection.

The Examiner also rejected claims 69-80 and 87-90 as being unpatentable over UK '462 in view of Graulich et al. and further in view of U.S. Patent Application No. 2003/0005838 to Damme et al. With respect to claims 69-76, the Examiner states that it would have been obvious to one of ordinary skill in the art to provide the method of UK '462, as modified by Graulich et al., with novolak and/or resole resins in view of Damme et al. teaching the particular types of phenolic resins. With respect to claims 72 and 73, the Examiner notes the thermal treatment of UK '462. With respect to claims 77-80, the Examiner states that UK '462 does not teach the specifics of the catalyst mixture, but that it would be obvious to one of ordinary skill to provide the method of UK '462, as modified by Graulich et al., with a catalyst and carrier having the recited properties in view of Damme et al. Finally, the Examiner states that with respect to claims 87-90, Damme et al. teaches the specifics of the developer even though UK '462 does not.

Applicants respectfully submit that there is no motivation to combine UK '462 as modified by Graulich et al. with Damme et al. UK '462 describes a process for producing a relief image in which an acid is sprayed via ink-jet onto a polymer to crosslink the polymer. Graulich et al., as noted above, reports an emulsion of polymeric materials in which the polymeric binder is formed of a polymer with N-methylol ether groups, not a polymeric material derived from phenol. In contrast, Damme et al. reports a method for the preparation of a negative working lithographic printing plate in which a dissolution inhibitor is imagewise ink-jet applied onto an image forming layer containing phenolic resins such as a novolak resin or a resole resin. However, none of the dissolution inhibitors described in Damme et al. are acids. Furthermore, application of these dissolution inhibitors to the printing plate do not crosslink the polymeric material in the printing plate. Instead, the dissolution inhibitors of Damme et al. reportedly insolubilize imaged portions of the image forming layer by forming hydrogen bonds.

Since UK '462, even as modified by Graulich et al., does not report an image forming layer that contains a polymeric binder and a polymeric crosslinking material each derived from phenol, there is no suggestion in UK '462 or in Graulich et al. to substitute the polymers described in Graulich et al. with the novolak and resole resins described in Damme et al. Moreover, since Damme et al. does not describe a process in which the novolak and resole resins are crosslinked after treatment with an acid, there is no suggestion in Damme et al. to use novolak resin or resole resin in the method reported in UK '462.

Finally, as noted above, UK '462 describes a positive working method in which a resin formed of phenol formaldehydes are sprayed with quinone diazides and then treated with an aqueous alkali solution so that the areas of the resin sprayed with quinone diazides dissolve. Since UK '462 reports a positive working method of imaging a phenolic resin by applying a non-acid to dissolve the phenolic resin, there is no suggestion in UK '462 to crosslink the phenolic resins of Damme et al. by applying an acid to the phenolic resins.

For at least these reasons, Applicants respectfully request that the Examiner withdraw this rejection.

The Examiner also rejects claims 81-85, 91, and 96-100 under 35 U.S.C. 103(a) as being unpatentable over UK '462 in view of Graulich et al. and further in view of U.S. Pat No. 6,691,618 to Deutsch et al. Specifically, the Examiner states that with respect to claims 81-85, UK '462 does not teach the specific heating and drying steps but that it would have been obvious to one of ordinary skill in the art to provide the method of UK '462, as modified by Graulich et al., with the steps of heating and drying so as to thoroughly complete the crosslinking reaction. With respect to claims 91, 96-100, the Examiner states that it would have been obvious to one of ordinary skill in the art to provide the method of UK '462 as modified by Graulich et al., with the developer of Deutsch et al. so as to provide the desired alkalinity and solvating capability.

Claims 81-85, 91, and 96-100 depend upon claim 67. As previously noted, claim 67 recites the step of providing an image forming layer that includes a polymeric binder derived from phenol and a polymeric crosslinking material derived from phenol. Applicants reassert the arguments made above that the claimed method would not result even if UK '462 were modified with the polymers reported in Graulich et al. Furthermore, Deutsch et al. does not report the use of an acid to crosslink an image forming layer that includes a polymeric binder derived from phenol and a polymeric crosslinking material derived from phenol. Therefore, there is no motivation to use the heating and drying steps described in Deutsch et al. in the method reported in UK '462.

Deutsch et al. actually reports three distinct methods for imaging a printing plate precursor. In a first embodiment, Deutsch et al. reports imaging an on-press developable negative working printing plate coating with an alkaline insolubilizing chemical and then heating the plate coating such that imaged portions of the coating crosslink. (See, for example, Deutsch et al., col. 18 lines 42-63.) In a second embodiment, Deutsch et al. reports an "image reversal" process in which a positive working plate is imaged by first blanket exposing the plate coating to light and then imagewise applying an insolubilizing chemical, which may include an acid, to the plate coating. The insolubilizing chemical reportedly decarboxylates the carboxylic acid groups that form in the plate coating during blanket exposure. (See Deutsch et al., col. 10, lines 6-13.) In a third embodiment, Deutsch et al.

reports a process in which a plate coating that includes carboxylic acid groups and alkali soluble resins is imaged by imagewise applying an insolubilizing chemical (which may include an acid) to the plate coating and heating the plate. Like in the second embodiment, the insolubilizing chemical reportedly decarboxylates the carboxylic acid groups in the plate coating.

Claims 81-85, 91, and 96-100 depend upon claim 67 and are allowable for at least the same reasons as claim 67. Furthermore, since none of the embodiments of Deutsch et al. report a method of applying an acid to a polymeric material to crosslink the polymeric material, there is no motivation to use the heating and drying steps described in Deutsch et al. in the method reported in UK '462. Therefore, Applicants respectfully request that the Examiner withdraw this rejection.

Finally, the Examiner rejects claims 92-95 under 35 U.S.C. 103(a) as being unpatentable over UK '462 in view of Graulich et al. and Deutsch et al. and further in view of U.S. Pat. No. 5,464,724 to Akiyama et al. According to the Examiner, while UK '462 and Deutsch et al. do not teach the ratio between the silicon oxide and metal oxide in the developer liquid, Akiyama et al. teaches the recited ratios and that it would have been obvious to provide the method of UK '462, as modified by Graulich et al. and Deutsch et al. with the recited silicon oxide to metal oxide ratio in view of Akiyama et al.

Claims 92-95 depend from claim 91, which itself depends from claim 67. Claims 92-95 are allowable for at least the same reasons as claims 67 and 91. Furthermore, as previously noted, claim 67 reports a method of imaging a printing plate in which an acid is applied to an image forming layer which includes a polymeric binder and a polymeric crosslinking material each of which are derived from phenol resulting in crosslinking of the polymeric material. In contrast, Akiyama et al. reports a pre-sensitized plate, which is imaged by exposure to light rather than by applying a liquid catalyst. Since Akiyama et al. does not report a method of applying an acid to a polymeric material to crosslink the polymeric material, there is no motivation to use the specific developer described in Akiyama et al. in the method reported in UK '462 as modified by Graulich et al. and Deutsch et al. Therefore, Applicants respectfully request withdraw of this rejection.


**Conclusion**

All pending claims are now in condition for allowance. A notice to that effect is respectfully requested.

Respectfully Submitted,

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